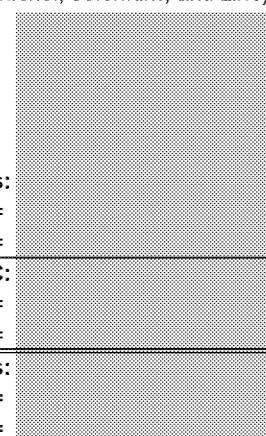


ACL Semi-Annual Monitoring Program and Western Lobe Monitoring
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Well BW-2 Area								
UPA-108B-LS	5-BW-2-new	Monitoring - Well BW-2 Area	UPA-Lower Sand	90-97	93.5	submersible - low flow	x	x
UPA-108B-TZ	5-BW-2-new	Monitoring - Well BW-2 Area	UPCUTZ	40-47	43.5	submersible - low flow	x	x
UPA-108B-US	5-BW-2-new	Monitoring - Well BW-2 Area	UPA-Upper Sand	69-76	72.5	submersible - low flow	x	x
UPA-108C-US	5-BW-2-new	Monitoring - Well BW-2 Area	UPA-Upper Sand	72-79	75.5	submersible - low flow	A	A
UPA-109-LS	5-BW-2-new	Monitoring - Well BW-2 Area	UPA-Lower Sand	133.5-140.5	137	submersible - low flow	A	A
UPA-109-USA	5-BW-2-new	Monitoring - Well BW-2 Area	UPA-Upper Sand	42-49	45	submersible - low flow	A	A
UPA-109-USB	5-BW-2-new	Monitoring - Well BW-2 Area	UPA-Upper Sand	80-87	84	submersible - low flow	A	A
BW-2	5-BW-2-old	Monitoring - Well BW-2 Area	UPA-Lower Sand	123-143	138	submersible - low flow	x	A
New Wells Included for Baseline Groundwater								
CA-102	6-new-baseline	Monitoring - Inert Area	Columbia	39-46	42.5	submersible - low flow	x	x
CA-103	6-new-baseline	Monitoring - Inert Area	Columbia	26-33	29.5	submersible - low flow	x	x
CA-106	6-new-baseline	Monitoring - Grantham South	Columbia	13-20	16.5	submersible - low flow	x	x
CA-110	6-new-baseline	Monitoring - West of Site	Columbia	5-12	8.5	submersible - low flow	A	A
CA-111	6-new-baseline	Monitoring - West of Site	Columbia	3-10	6.5	submersible - low flow	A	A
UPA-103-LS	6-new-baseline	Monitoring - Inert Area	UPA-Lower Sand	116-123	119.5	submersible - low flow	x	x
UPA-103-TZ	6-new-baseline	Monitoring - Inert Area	UPCUTZ	65-72	68.5	submersible - low flow	x	x
UPA-103-US	6-new-baseline	Monitoring - Inert Area	UPA-Upper Sand	83-90	86.5	submersible - low flow	x	x
UPA-110-US	6-new-baseline	Monitoring - West of Site	UPA-Upper Sand	51-58	54.5	submersible - low flow	A	A
UPA-111-LSA	6-new-baseline	Monitoring - West of Site	UPA-Lower Sand	77-84	80.5	submersible - low flow	A	A
UPA-111-LSB	6-new-baseline	Monitoring - West of Site	UPA-Lower Sand	109-116	112.5	submersible - low flow	A	A
Existing Wells Downgradient of Well PW-1(U) - Not Proposed for Sampling in 2020								
AWC-E1	8-NS	Former Production - Upgradient of AWC	UPA-Upper Sand	122-162	132	submersible - low flow	R	R
AWC-E1	8-NS	Former Production - Upgradient of AWC	UPA-Lower Sand	122-162	156	submersible - low flow	R	R
BW-3	9-ACL only	Monitoring	UPA-US and LS	50 - 135	92	submersible - low flow	R	-
DGC-11S	8-NS	Monitoring - Eastern AoA Boundary	UPA-Upper Sand	70-80	75	submersible - low flow	R	-
DGC-8C	8-NS	Monitoring - Inert Area	Columbia	19-29	30	submersible - low flow	R	-
DGC-8D	8-NS	Monitoring - Inert Area	UPA-Lower Sand	108-118	117	submersible - low flow	R	-
DGC-8S	8-NS	Monitoring - Inert Area	UPA-Upper Sand	60-80	75	submersible - low flow	R	-
MW-18	3-MW-18/34-old	Monitoring - Wells MW-18/MW-34 Area	UPA-Upper Sand	80 - 90	85	peristaltic	R	R
MW-22N	9-ACL only	Monitoring - ACL Western Lobe	UPA-Lower Sand	139 - 159	149	submersible - low flow	-	-
MW-22NU	9-ACL only	Monitoring - ACL Western Lobe	UPA-Upper Sand	114 - 121	NA	submersible - low flow	-	-
MW-28	5-BW-2-old	Former Extraction - ACL Eastern Lobe	UPA-US and LS	40 - 120	50	submersible - low flow	R	-
MW-29	9-ACL only	Former Extraction - ACL Eastern Lobe	UPA-US and LS	34 - 113	39	submersible - low flow	R	-
MW-31	9-ACL only	Former Extraction - ACL Eastern Lobe	UPA-US and LS	59 - 105	75	submersible - low flow	R	-
MW-34	3-MW-18/34-old	Monitoring - Wells MW-18/MW-34 Area	UPA-US and LS	75-131.5	100	submersible - low flow	R	R
MW-38N	8-NS	Monitoring	UPA-US and LS	72 - 132	102	submersible - low flow	-	-
MW-40	9-ACL only	Monitoring	UPA-Lower Sand	110 - 140	125	submersible - low flow	-	-
MW-49N	9-ACL only	Monitoring	UPA-US and LS	72 - 132	135	submersible - low flow	-	-
MW-54	9-ACL PFAS only	Monitoring	UPA-Upper Sand	40 - 50	TBD - no log	submersible - low flow	-	-
MW-56	9-ACL PFAS only	Monitoring	UPA-Upper Sand	75 - 100	85	submersible - low flow	-	-
MW-58	9-ACL PFAS only	Monitoring	UPA-Upper Sand	65 - 110	75 and 95	submersible - low flow	-	-
P-4	9-ACL only	Monitoring - ACL Western Lobe	UPA-Upper Sand	115 - 125	120	submersible - low flow	-	-
P-4L	9-ACL only	Proposed Monitoring - ACL Western Lobe	UPA-Lower Sand	138 - 145	NA	submersible - low flow	-	-
P-5U	8-NS	Monitoring	UPA-Upper Sand	126 - 136	75	submersible - low flow	R	-
RW-10	9-ACL only	Former Extraction - ACL Western Lobe	UPA-Upper Sand	77 - 102	90	submersible - low flow	-	-
UPA-02S	8-NS	Monitoring	UPA-Upper Sand	97-107	102	submersible - low flow	R	-
UPA-112-LS	8-NS	Potentiometric Head East of Site	UPA-Lower Sand	106-113	109.5	submersible - low flow	-	-
UPA-112-TZ	8-NS	Potentiometric Head East of Site	UPCUTZ	65-72	68.5	submersible - low flow	-	-
UPA-112-US	8-NS	Potentiometric Head East of Site	UPA-Upper Sand	76-83	79.5	submersible - low flow	-	-
WL-1L	9-ACL only	Monitoring - ACL Western Lobe	UPA-Lower Sand	120 - 127	NA	submersible - low flow	-	-
WL-1U	9-ACL only	Monitoring - ACL Western Lobe	UPA-Upper Sand	87 - 94	NA	submersible - low flow	-	-
WL-2L	9-ACL only	Monitoring - ACL Western Lobe	UPA-Lower Sand	131 - 138	NA	submersible - low flow	-	-
WL-2U	9-ACL only	Monitoring - ACL Western Lobe	UPA-Upper Sand	109 - 116	NA	submersible - low flow	-	-
AWC Monitoring Wells								
AWC-E2	7-AWC	Former Production - Upgradient of AWC	UPA-Upper Sand	131-173	140	submersible - low flow	x	x
AWC-E2	7-AWC	Former Production - Upgradient of AWC	UPA-Lower Sand	131-173	165	submersible - low flow	x	x
AWC-K1	7-AWC	Monitoring - Eastern AoA Boundary	UPA-Lower Sand	135-173	160	submersible - low flow	x	x
AWC Extraction Wells - only extraction wells which are pumping at the time of the event can be sampled								
AWC-2	ACL only	Production Well	UPA-Lower Sand	122-160	NA	no purge - direct draw	-	-
AWC-6R	AWC	Production Well	UPA-US and LS	100-140	NA	no purge - direct draw	x	x
AWC-7	AWC	Production Well	UPA-US and LS	115-175	NA	no purge - direct draw	x	x
AWC-G3R	AWC	Production - Southern AoA Boundary	UPA-US and LS	102-157	NA	no purge - direct draw	x	x

Notes:

- 1) "x" indicates location will be sampled for indicated parameter(s)
- 2) "-" indicates location will not be sampled for indicated parameters and/or location was not included as a SAP Revision 2 sample location
- 3) *PFAS indicates sampling location will be resampled for PFAS analysis due suspect data from October 2019.
- 4) April monitoring event represents a site-wide event and October monitoring event is limited to information needed for design
- 5) A synoptic round of water levels will be collected prior to sampling during each monitoring event.
- 6) AWC agreed to let the Golder sample AWC wells as part of semi-annual monitoring events beginning in October 2018.
- 7) Trip blanks will accompany each shipment of VOC samples (1 per day).
- 8) The following quality assurance/quality control (QA/QC) samples will be collected during each monitoring event at a rate of 1 per 20 primary samples: field duplicates, field equipment rinsate blanks, matrix spikes and matrix spike blanks.
- 9) The LFExS discharge is monitored on a semi-annual basis in accordance with the New Castle County Wastewater Discharge Permit requirements. The samples are analyzed for Total Toxic Organics (TTO) VOCs, TTO SVOCs, PCBs, biological oxygen demand (BOD), Inductively Coupled Plasma Mass Spectroscopy (ICP MS) metals (arsenic, cadmium, chromium, copper, lead, molybdenum, nickel, selenium, and zinc), mercury (cold vapor atomic absorption spectrometry (CVAA), ammonia, TSS, cyanide and pH).
- 10) The PW-1(U) system discharge is monitored on a semi-annual basis in accordance with the New Castle County Wastewater Discharge Permit requirements. The samples are analyzed for VOCs, SVOCs, BOD, ICP MS metal lead, molybdenum, nickel, selenium, and zinc), mercury (CVAA), ammonia, TSS, cyanide and pH.



Change Summary

Well Samples:	Routine	Cations + Anions	PFAS	April		October	
				x count	94	A count	16
April =	94	NA	NA	A count	14	R count	16
October =	58	NA	NA	(5 redundant with ACL)			
QA/QC:							
April =	15	NA	NA				
October =	9	NA	NA				
Totals:							
April =	109	-	-				
October =	67	NA	NA				

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ke duplicates.
 TTO pesticides, polychlorinated biphenyls
 option; CVAA), ammonia, total suspended

s (arsenic, cadmium, chromium, copper,